

1997 Chevrolet S10 Pickup

1995-97 SUSPENSION Rear - Blazer, Bravada, S10 Pickup, Jimmy & Sonoma

1995-97 SUSPENSION

Rear - Blazer, Bravada, S10 Pickup, Jimmy & Sonoma

DESCRIPTION & OPERATION

These vehicles use a leaf spring and solid rear axle suspension system. The rear axle assembly is attached to a multi-leaf springs by U-bolts. The front ends of the springs are attached to the frame at the front hangers, through rubber bushings. The rear ends of the springs are attached to the frame by the use of shackles which allow the springs to "change their length" while the vehicle is in motion.

Ride control is provided by two identical direct double acting shock absorbers, angle mounted between the frame and brackets attached to the anchor plate.

ADJUSTMENT

Manufacturer does not provide adjustment procedures.

TROUBLE SHOOTING

To perform rear suspension troubleshooting diagnosis, see **Fig. 1**

PROBLEM	POSSIBLE CAUSE	CORRECTION
Spring Noise	1. Loose U-bolts. 2. Loose or worn eye bushings. 3. Lack of lubrication. 4. Faulty shock absorber.	1. Tighten to specified torque. 2. Replace the eye bushings. 3. Lubricate as required. 4. Replace the shock absorber.
Spring Sag or Bottom	1. Inoperative shock absorbers. 2. Broken spring leaf. 3. Severe operation or overloading.	1. Replace the shock absorbers. 2. Replace the spring assembly. 3. Check the load capacity rating.
Spring Breakage	1. Loose U-bolts. 2. Normal fatigue. 3. Overloading.	1. Tighten to specified torque. 2. Replace the spring. 3. Check the load capacity rating.
Shock binding	1. Scored rod. 2. Dents. 3. Leaks (seal cover).	1. Replace 2. Replace 3. Replace
Shock Noisy	1. Broken mounts. 2. Extreme bushing wear.	1. Replace. 2. Replace.

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Fig. 1: Rear Suspension Troubleshooting
Courtesy of GENERAL MOTORS CORP.

REMOVAL & INSTALLATION

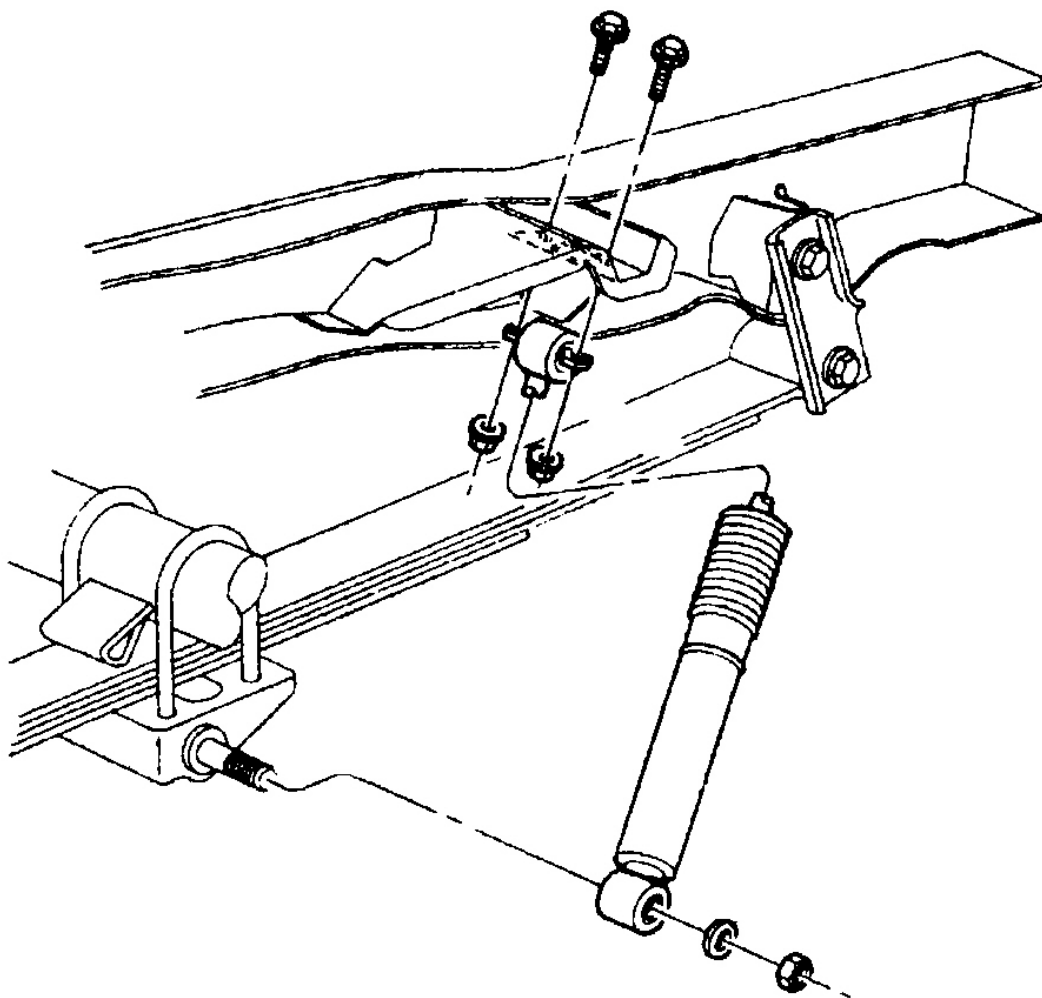
SHOCK ABSORBER

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Removal

1. Raise vehicle on a hoist.
2. Remove shock absorber to frame bracket nuts and bolts. See **Fig. 2**, **Fig. 3** or **Fig. 4**.
3. Remove shock absorber to anchor plate nut and washer.
4. Remove shock absorber from the vehicle.

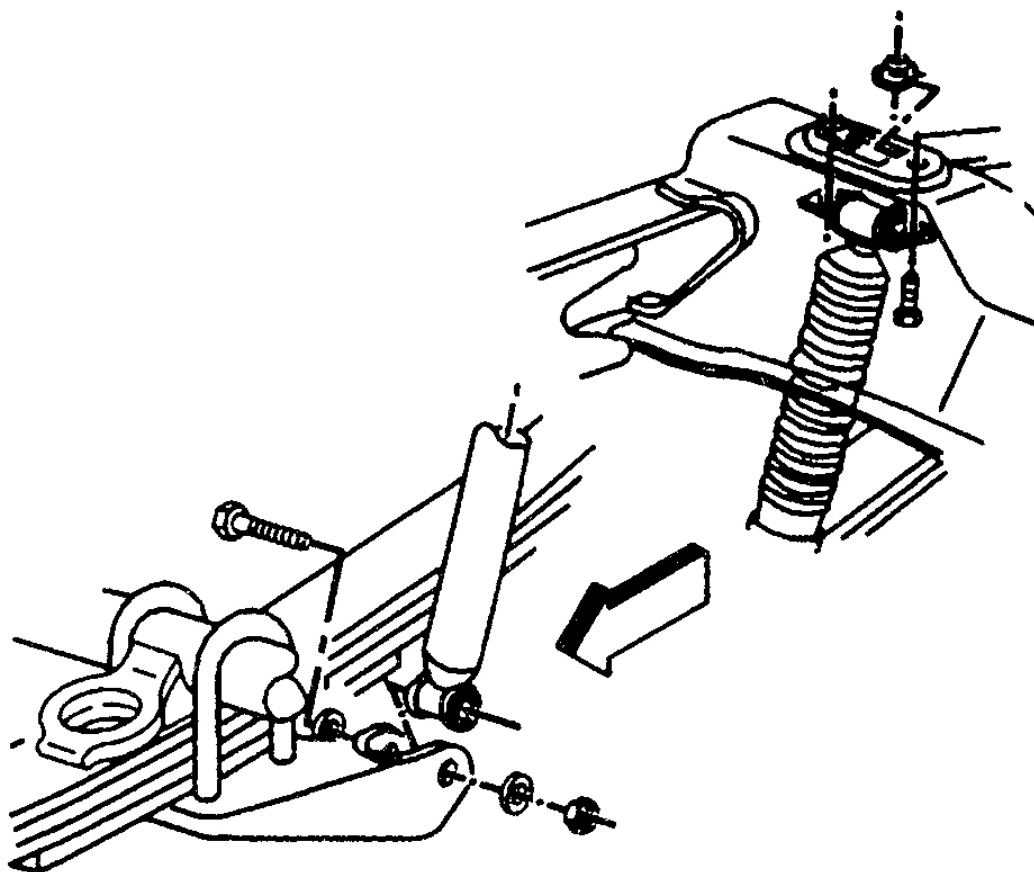


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Fig. 2: Removing Shock Absorber
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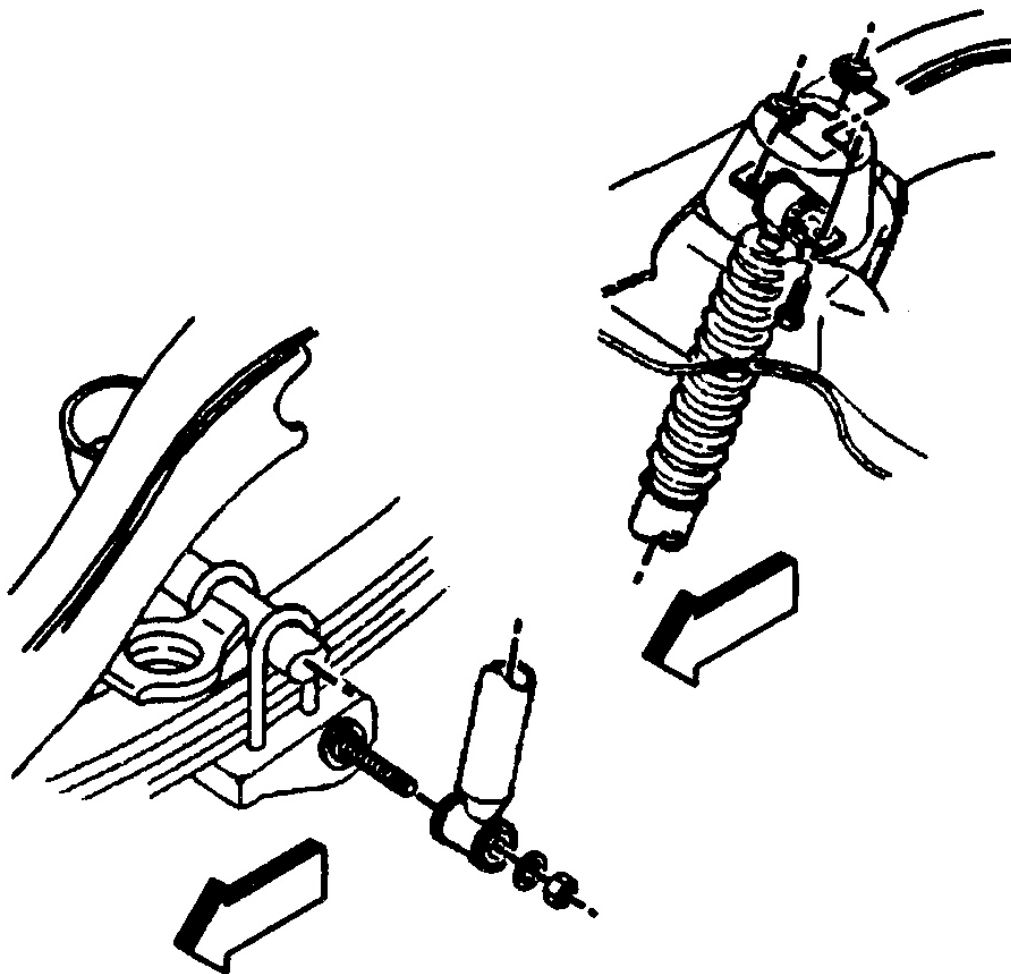


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Fig. 3: Removing Shock Absorber (4-Door Utility Models)
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Fig. 4: Removing Shock Absorber (2-Door Utility Models)
Courtesy of GENERAL MOTORS CORP.

Installation

1. Install shock absorber to lower anchor plate. DO NOT attach the washer or nut. See **Fig. 2**, **Fig. 3** or **Fig. 4**.
2. Install shock absorber to the frame bracket with the bolts and nuts.
3. Tighten the bolts and nuts. See **TORQUE SPECIFICATIONS**.
4. Install lower anchor plate washer and nut.
5. Tighten the nut.
6. Lower the vehicle.

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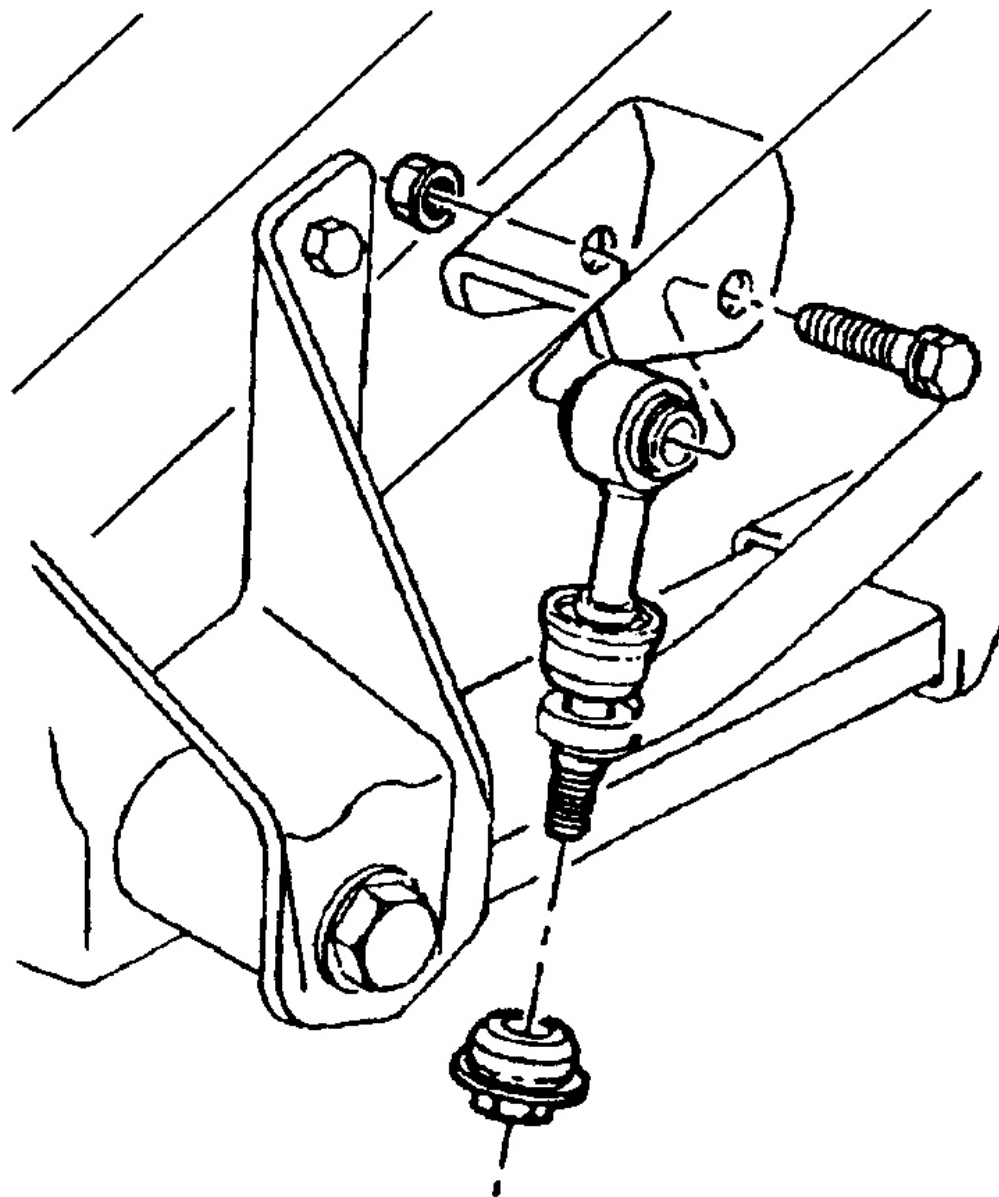
STABILIZER BAR

Removal

1. Raise vehicle on a hoist.
2. Remove lower nuts, washer and bolts from stabilizer links. See **Fig. 5** or **Fig. 6**
3. Remove the nuts from the U-bolts. See **Fig. 7**, **Fig. 8** or **Fig. 9** .
4. Remove U-bolts, clamps, and insulators.
5. Remove the stabilizer bar.

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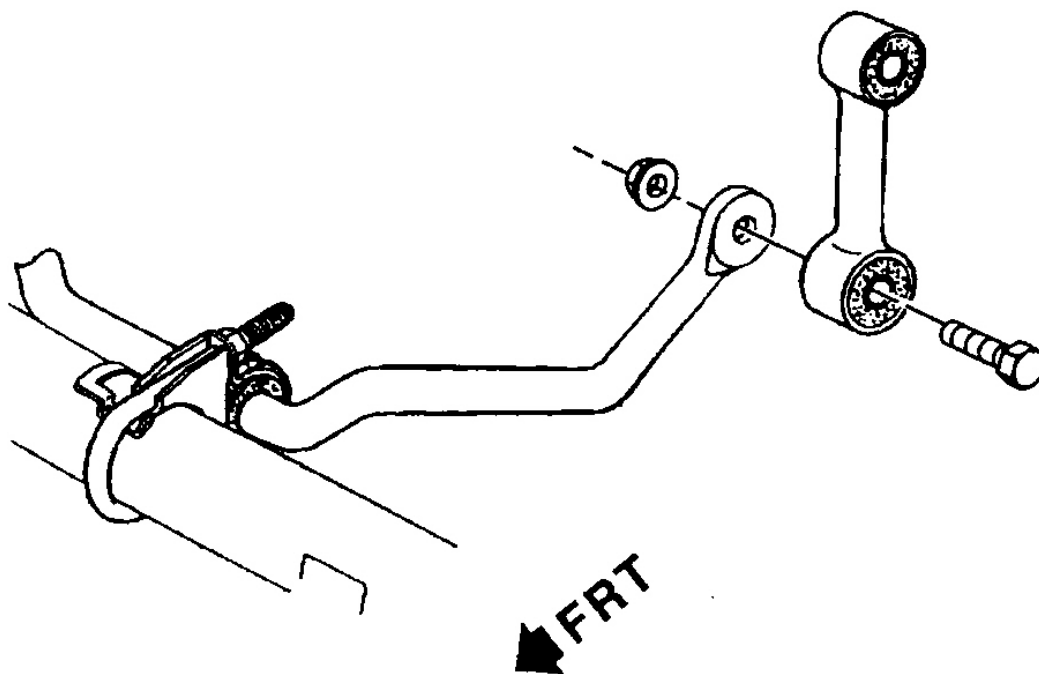


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Fig. 5: Removing Stabilizer Link (2 Door Utility Model)
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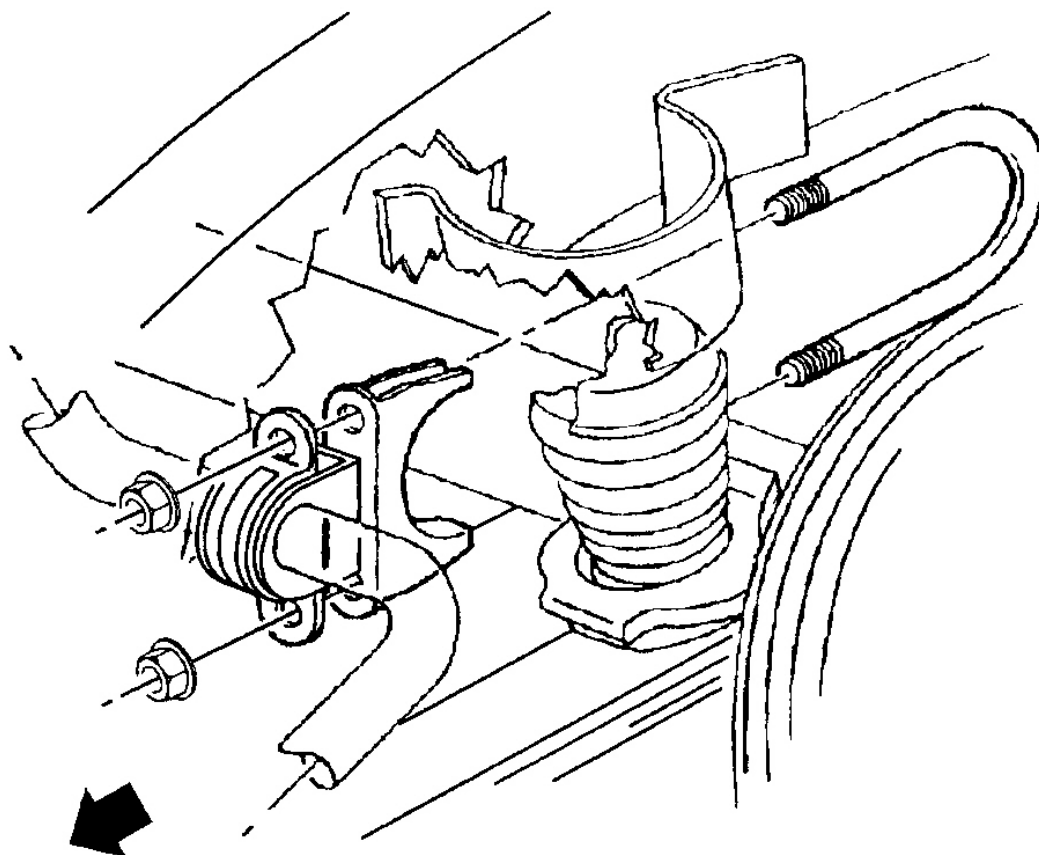


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Fig. 6: Removing Stabilizer Link (4 Door Utility Model)
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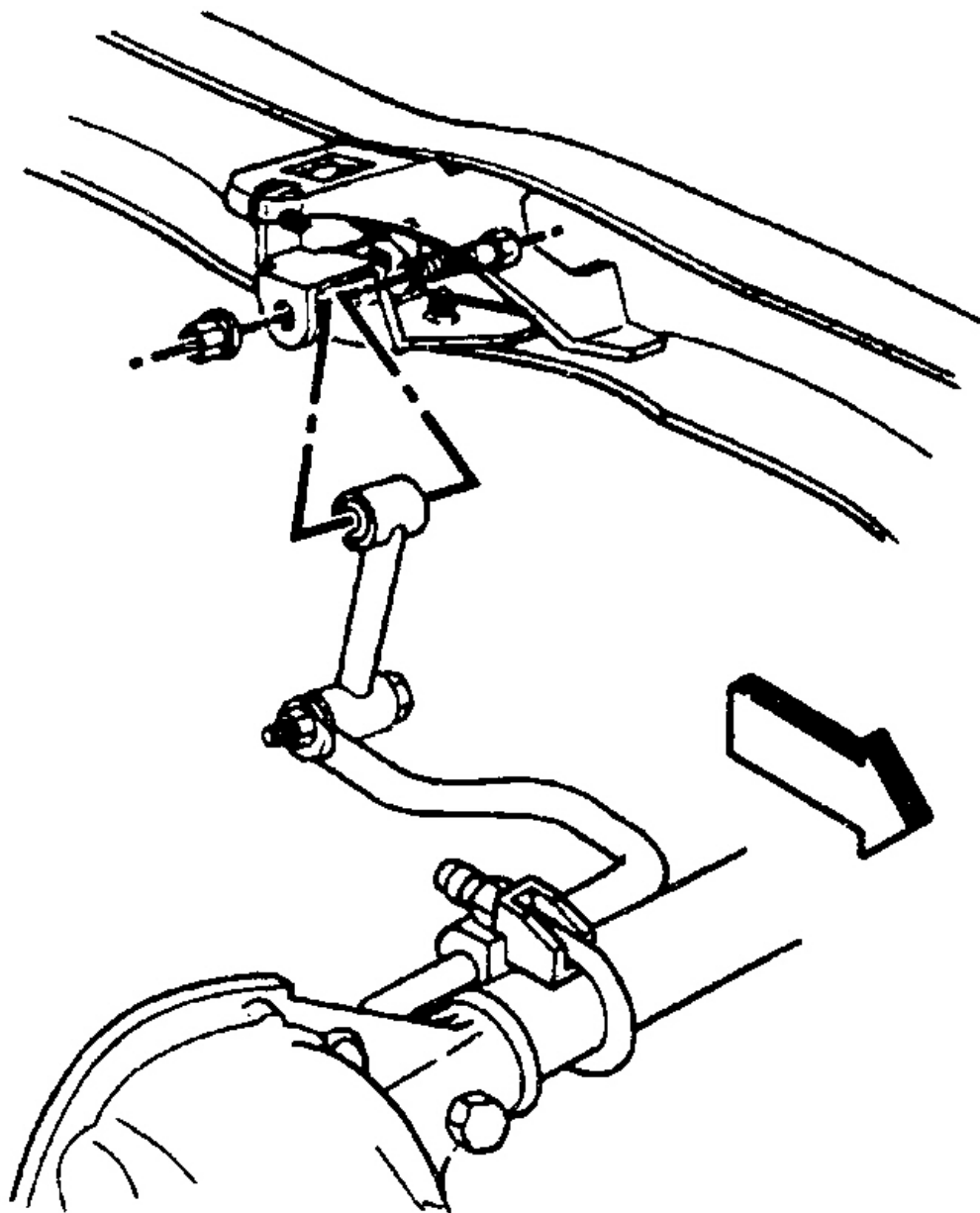


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Fig. 7: Removing Stabilizer Bar to Axle Mounting (2 Door Utility Model)
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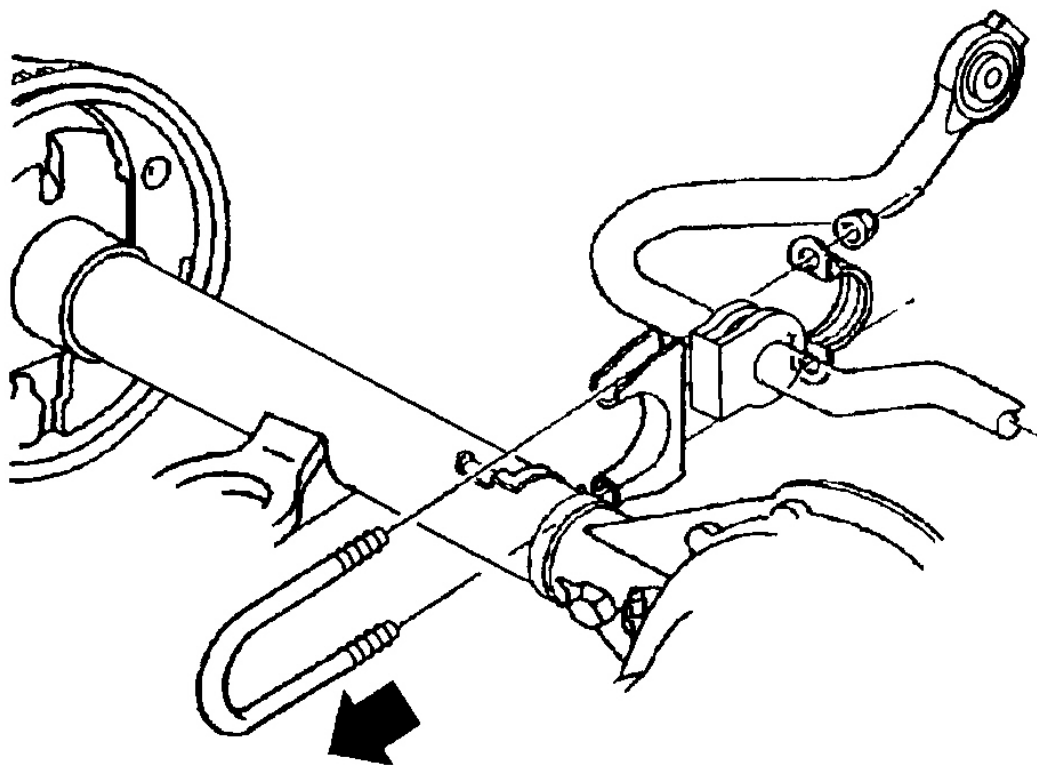


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Fig. 8: Removing Stabilizer Upper Link Bolt (RWD Pickup Models)
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Fig. 9: Removing Stabilizer Bar to Axle Mounting (4 Door and AWD Utility Model)
Courtesy of GENERAL MOTORS CORP.

Installation

1. Install stabilizer bar to rear axle. See **Fig. 7**, **Fig. 8** or **Fig. 9**.
2. Install insulators, clamps, and U-bolts.
3. Install nuts to U-bolts.
4. Tighten the nuts. See **TORQUE SPECIFICATIONS**.
5. Install stabilizer bar to link mounting bolt (4 door Utility models only). See **Fig. 6**
6. Install stabilizer bar to link nut. **Fig. 5**, **Fig. 6**, **Fig. 7**, **Fig. 8** or **Fig. 9**
7. Tighten the nuts. See **TORQUE SPECIFICATIONS**.
8. Lower the vehicle.

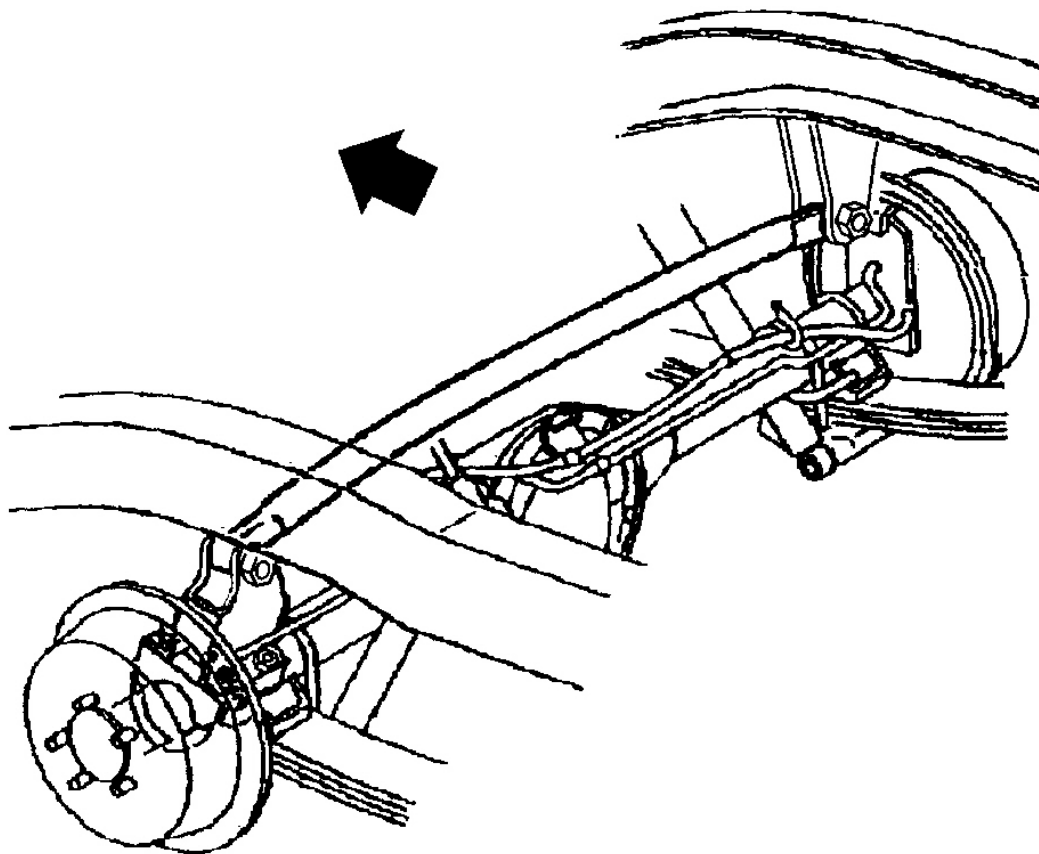
TRACK BAR (ZR2 MODELS)

Removal

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1. Raise the vehicle on a hoist and support rear axle at curb height position.
2. Remove track bar mounting bolts, washer and nuts at axle bracket and at frame bracket. See **Fig. 10**, **Fig. 11** or **Fig. 12**
3. Remove the track bar. See **Fig. 10**, **Fig. 11** or **Fig. 12**.

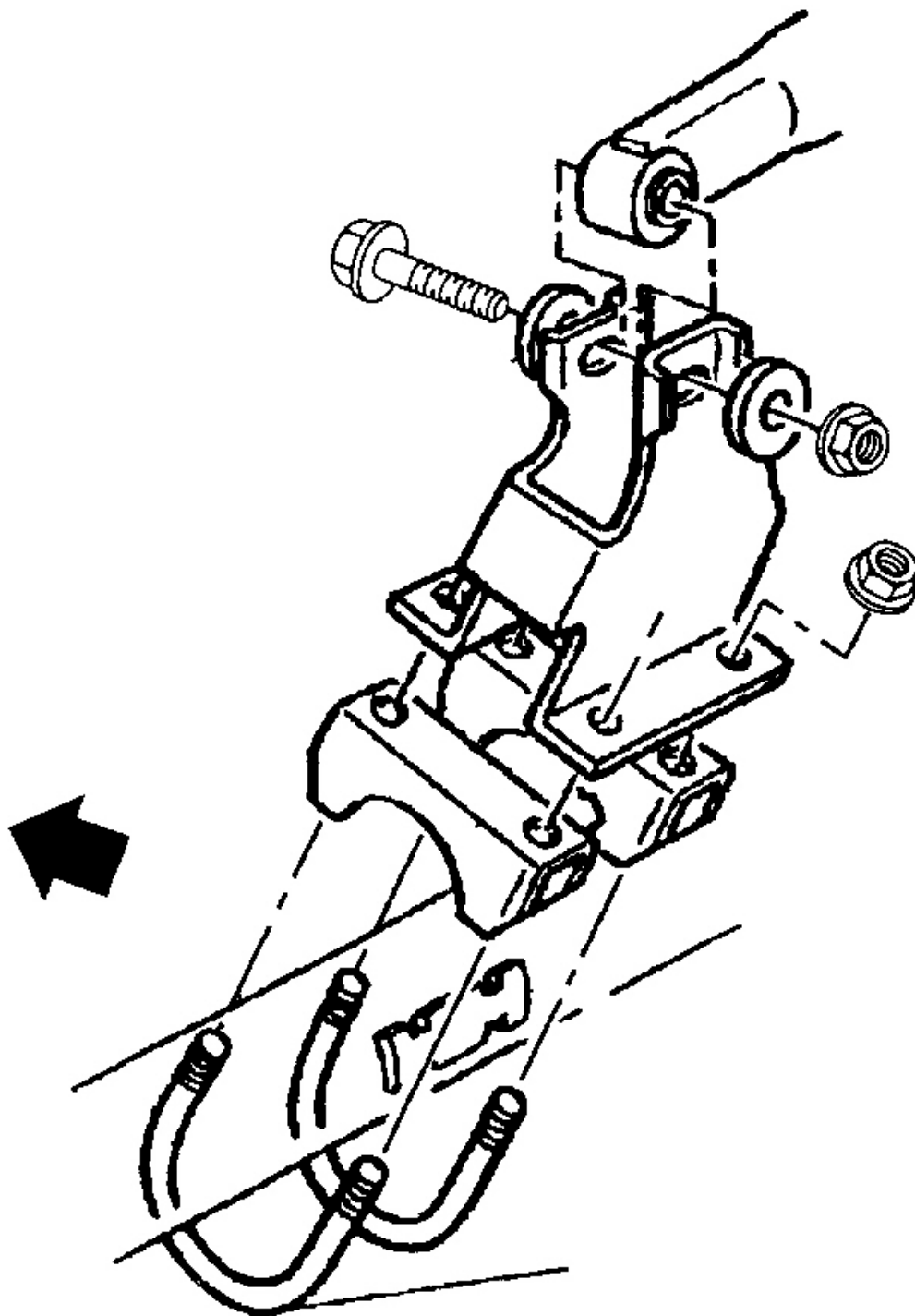


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Fig. 10: Identifying Track Bar (ZR2 Models)
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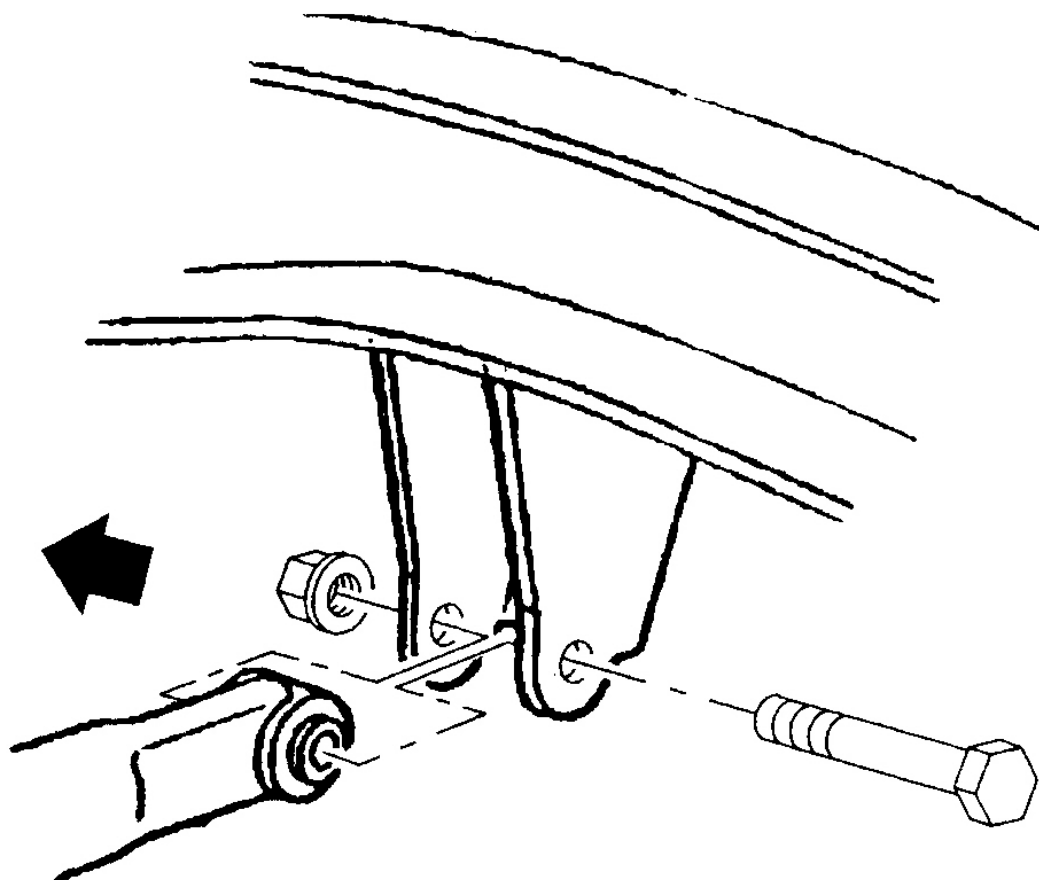
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Fig. 11: Removing Track Bar Axle Mounting (ZR2 Models)

Courtesy of GENERAL MOTORS CORP.



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Fig. 12: Removing Track Bar To Frame Mounting Bolt (ZR2 Models)

Courtesy of GENERAL MOTORS CORP.

Installation

1. Install the position track bar in frame bracket and loosely install bolt, washers, and nut. See **Fig. 10**, **Fig. 11** or **Fig. 12** .
2. Install the position track bar in axle bracket and loosely install bolt, washers, and nut.
3. Tighten the axle nut and the frame bracket bolt head. See **TORQUE SPECIFICATIONS**.
4. Remove rear axle support and lower vehicle.

SPRING ASSEMBLY

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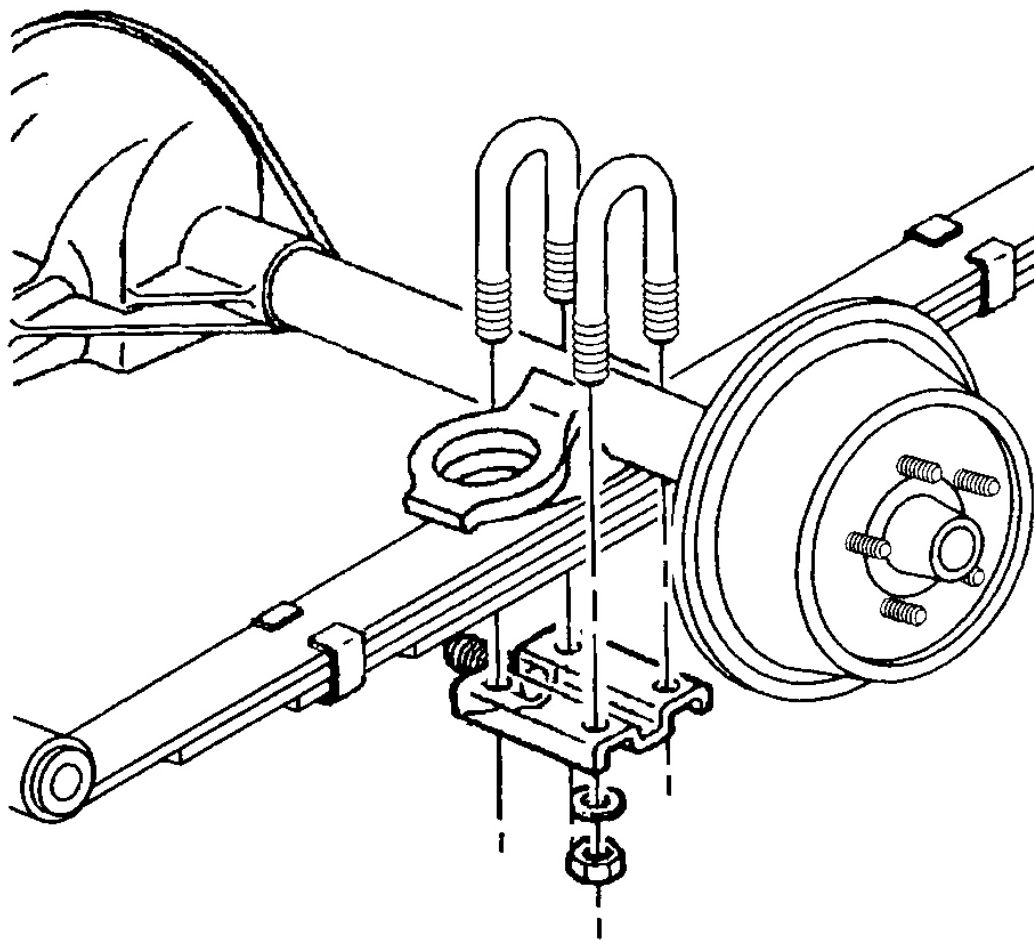
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Removal

1. Raise the vehicle on a hoist.
2. Support the rear axle to relieve the tension on the leaf springs.
3. Remove the shock absorber. See **SHOCK ABSORBER**
4. Remove the U-bolt nuts, washers, anchor plate, and U-bolts. See **Fig. 13**
5. Remove the spare tire, if equipped.
6. Remove the shackle to frame bolt, washers, and nut. See **Fig. 14**
7. Remove the fuel tank on utility models.
8. Remove the front bracket nut, washers, and nut. See **Fig. 15**
9. Remove spring assembly from the vehicle.
10. Remove shackle to spring nut, washers, and spring bolt.
11. Remove the shackle.

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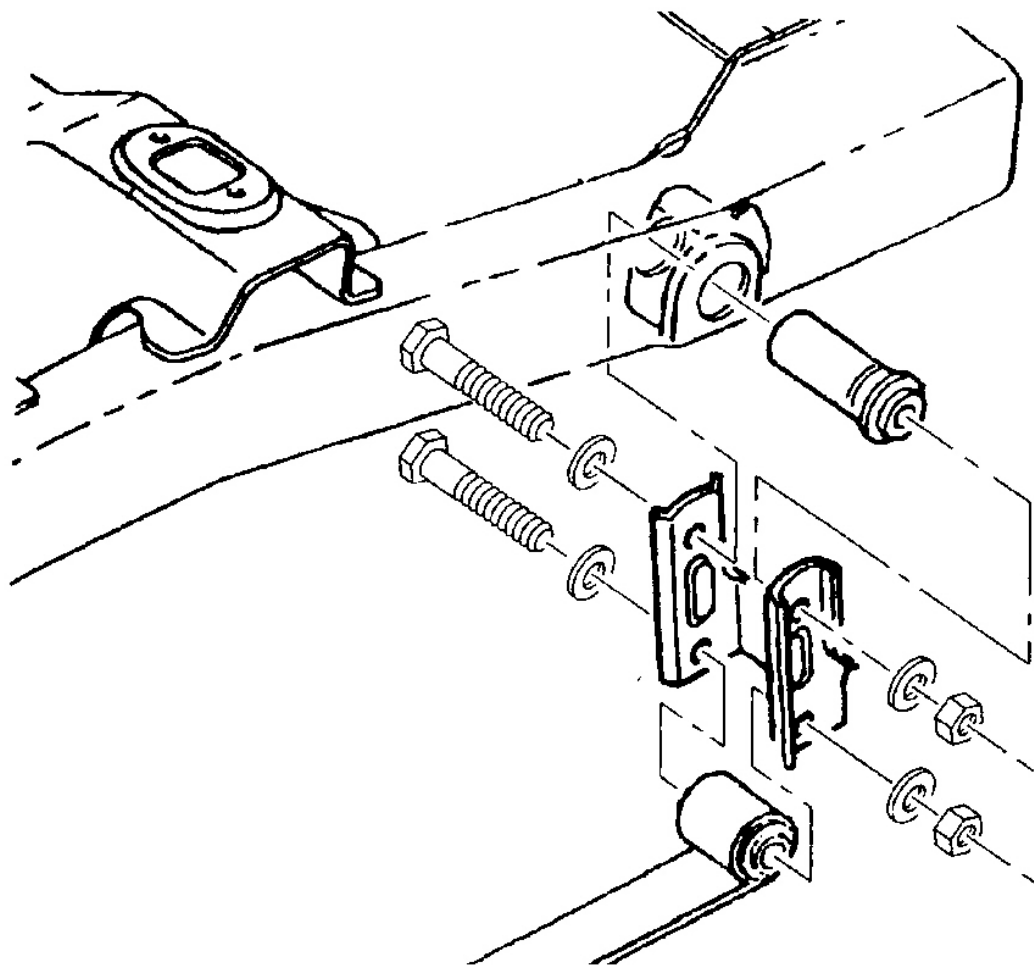


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Fig. 13: Removing U-Bolts & Anchor Plate Mounting
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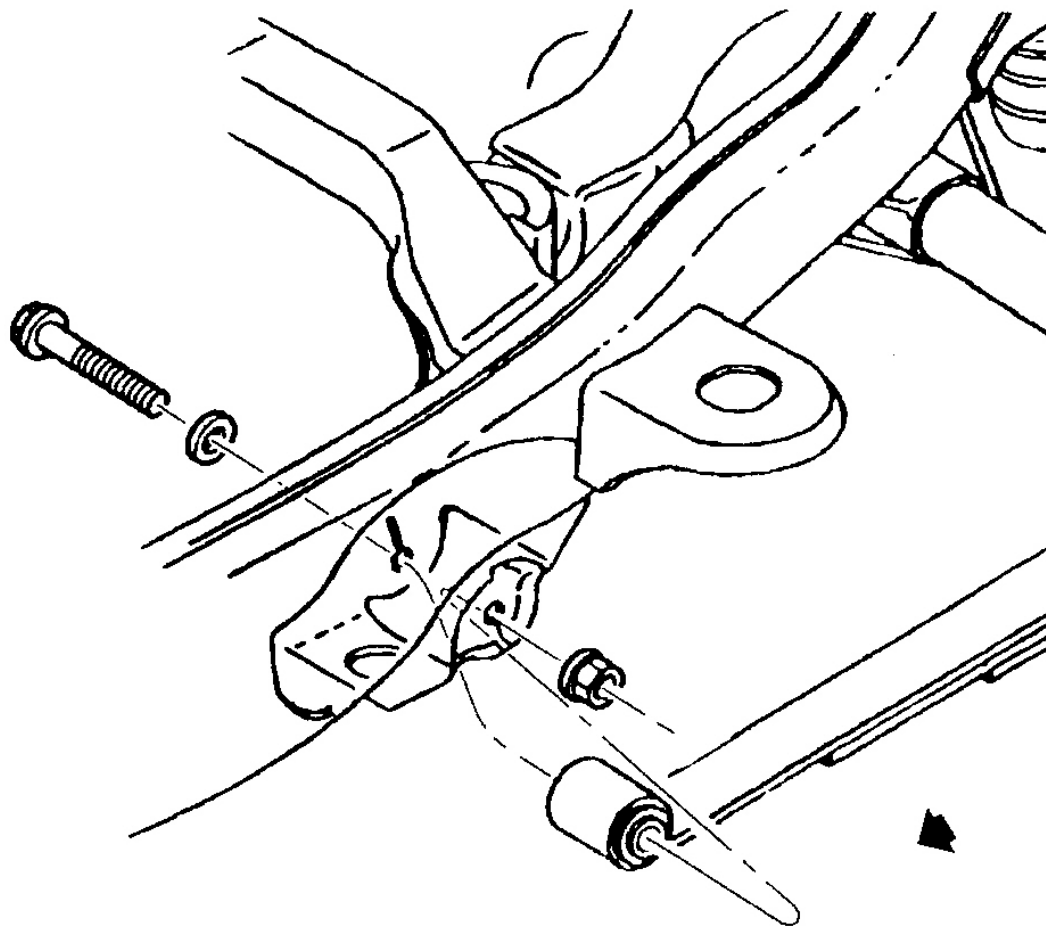


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Fig. 14: Removing Shackle to Frame Mounting Bolts & Bushing
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Fig. 15: Removing Front Bracket Mounting Bolt
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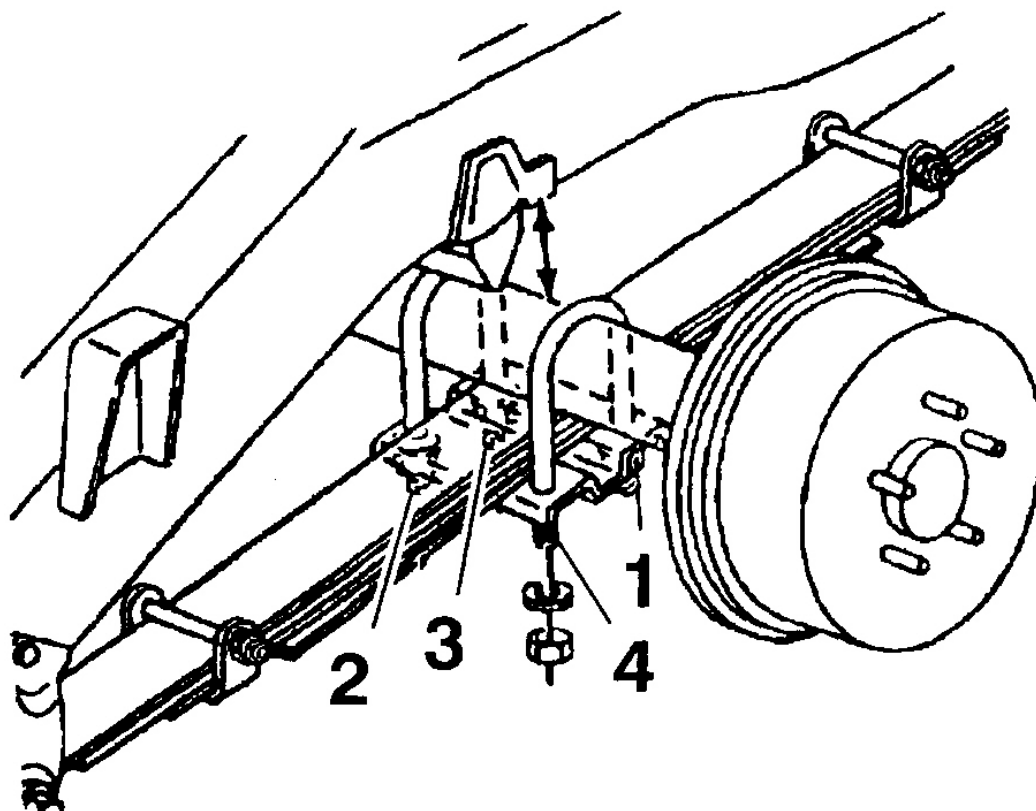
Installation

1. Install shackle to the rear spring eye. See **Fig. 14**
2. Install shackle to spring bolt, washers, and nut. DO NOT tighten.
3. Install spring assembly to the vehicle.
4. Install the front bracket bolt, washers, and nut. DO NOT tighten. See **Fig. 15**
5. Install the fuel tank.
6. Install shackle to frame bolt, washers, and nut. DO NOT tighten.
7. Remove the spring support.
8. Install spare tire, if equipped.

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9. Install the U-bolts, anchor plate, washers, and U-bolt nuts. See **Fig. 13**
10. Tighten the U-bolts nuts in sequence. See **Fig. 16**. See **TORQUE SPECIFICATIONS**.
11. Tighten the front bracket nut and rear shackle nuts.
12. Install the shock absorber. See **SHOCK ABSORBER**.



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Fig. 16: Installing U-Bolts & Torquing In Sequence
Courtesy of GENERAL MOTORS CORP.

SPRING BUSHING

Removal

1. Remove the spring assembly. See **SPRING ASSEMBLY**.
2. Remove the bushing from the spring assembly.
3. Press the bushing from the spring in an arbor press.

Cleaning

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1. Clean the spring eye of any remaining parts of the bushing.
2. Remove any burrs that would cause any the new bushing to bind when installed.

Installation

1. Apply rubber lubricant to the bushing, and the spring eye.
2. Install the bushing to the spring assembly. See **SPRING ASSEMBLY**.
3. Install the spring assembly to the vehicle.

SHACKLE

Removal

1. Raise the vehicle on a hoist and support the rear axle.
2. Remove the frame to shackle nut, washers, and frame bolt. See **Fig. 14**
3. Remove the shackle to spring nut, washers, and bolt.
4. Remove the shackle from the vehicle.

Installation

1. Install the shackle to the vehicle. See **Fig. 14**.
2. Install the shackle to spring bolt, washers, and nut. DO NOT tighten.
3. Install the frame to shackle bolt, washers, and nut. DO NOT tighten.

NOTE: Support the axle in such a way that there is a distance of 170 mm plus or minus 6 mm (6.7 inch plus or minus 0.24 inch), between the axle tube and the bumper bracket metal surfaces.

4. Tighten the rear shackle nuts. See **TORQUE SPECIFICATIONS**.
5. Lower the vehicle.

REAR SHACKLE BUSHING

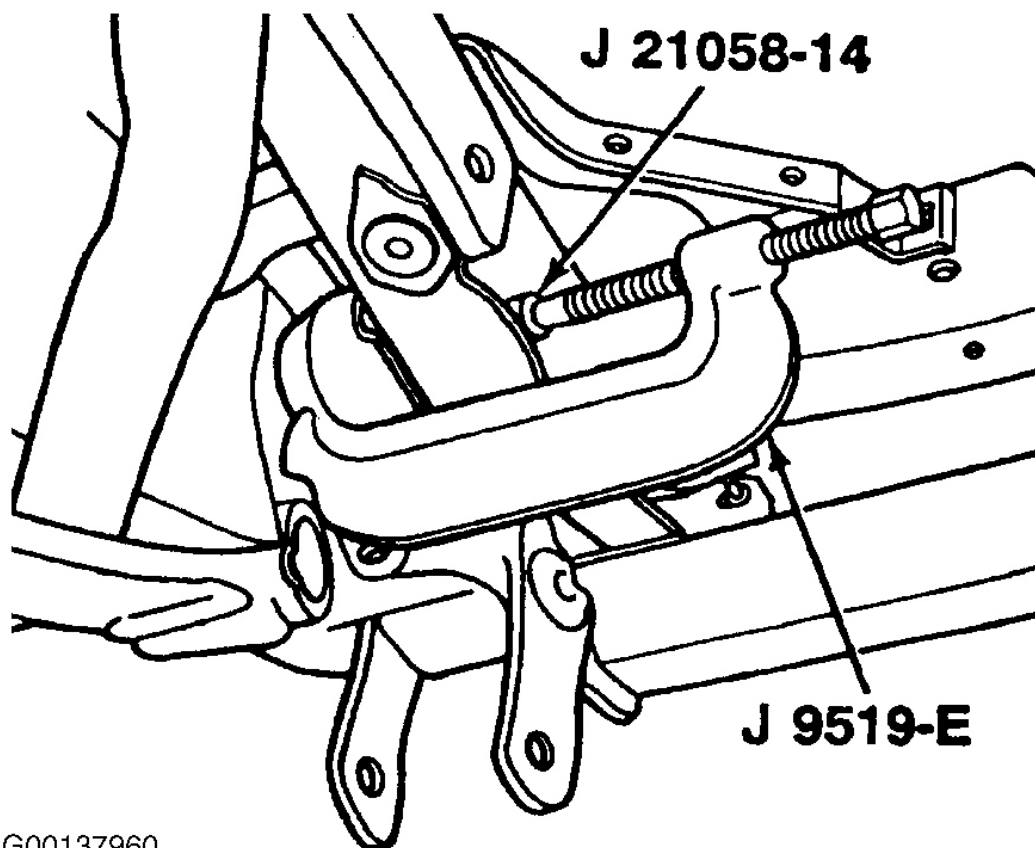
Removal

1. Raise vehicle on a hoist.
2. Disconnect the negative battery cable.
3. On 2 Door Utility Models, remove the fuel tank. On all models, support the rear axle.
4. Remove the upper shackle bolt, nut and flat washers.
5. Loosen the lower shackle bolt at the spring and leave it attached.
6. Lower the axle until there is enough clearance to remove the shackle bushing.
7. Using a blunt punch, straighten out the bushing flange that comes through the inner frame.

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- On 2 Door Utility Models, it is recommended that both shackle bushings are replaced while the fuel tank is out. On all models, remove the shackle bushing using the Adapter (J 21058-14) and the Ball Joint Remover (J 9519-E). See **SPECIAL TOOLS**. See **Fig. 17**.



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Fig. 17: Removing Spring Shackle Bushing
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Installation

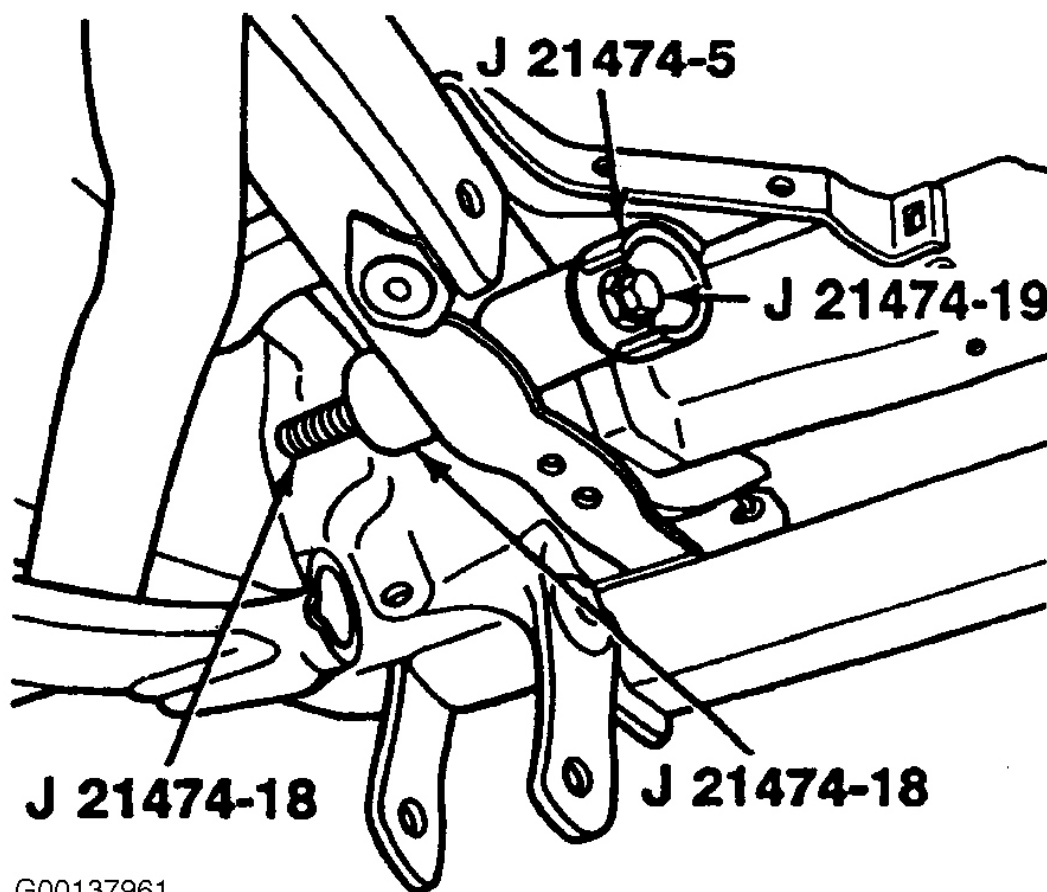
- Install shackle bushing using the 3/8 Inch Nut (J 21474-18), the Control Arm Bushing Installer (J 21474-13), the 3/8 Inch Bolt (J 21474-19), and the Receiver (J 21474-5). See **Fig. 18**. See **SPECIAL TOOLS**
- Assemble tools as shown and pull the bushing into the frame rail until the flanged portion of the bushing is flush with the rail.
- Stake the shackle bushing inner flange.
- Raise axle into position.
- Install frame to shackle bolt, washers, and nut; DO NOT tighten.
- Repeat steps 1-5 for the other bushings.

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NOTE: Support the axle in such a way that there is a distance of 170 mm plus or minus 6 mm (6.7 inch plus or minus 0.24 inch) between the axle tube and the bumper bracket metal surfaces.

7. Tighten the rear shackle nuts. See TORQUE SPECIFICATIONS.
8. On 2 Door Utility Models, install the fuel tank.
9. On all models, connect the negative battery cable.
10. Lower the vehicle.



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Fig. 18: Installing Spring Shackle Bushing
Courtesy of GENERAL MOTORS CORP.

TORQUE SPECIFICATIONS

TORQUE SPECIFICATIONS (1995)

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Application	Ft. Lbs. (N.m)
Lug (Wheel) Nuts	95 (130 N.m)
Shackle to Frame Nuts	92 (125 N.m)
Shackle to Spring Nuts	92 (125 N.m)
Shock Absorber Lower Nuts	47 (64 N.m)
Shock Absorber Upper Nuts	17 (23 N.m)
Spring to Front Bracket Nuts	92 (125 N.m)
Spring U-Bolt Nuts	85 (115 N.m)
Stabilizer Clamp U-Bolts Nuts	44 (60 N.m)
Stabilizer Bar to Link Nut (2 Door Utility)	15 (20 N.m)
Stabilizer Bar to Link Nut (4 Door Utility)	50 (68 N.m)
Track Bar Axle Mount Nut	44 (60 N.m)
Track Bar Frame Mount Bolt	44 (60 N.m)

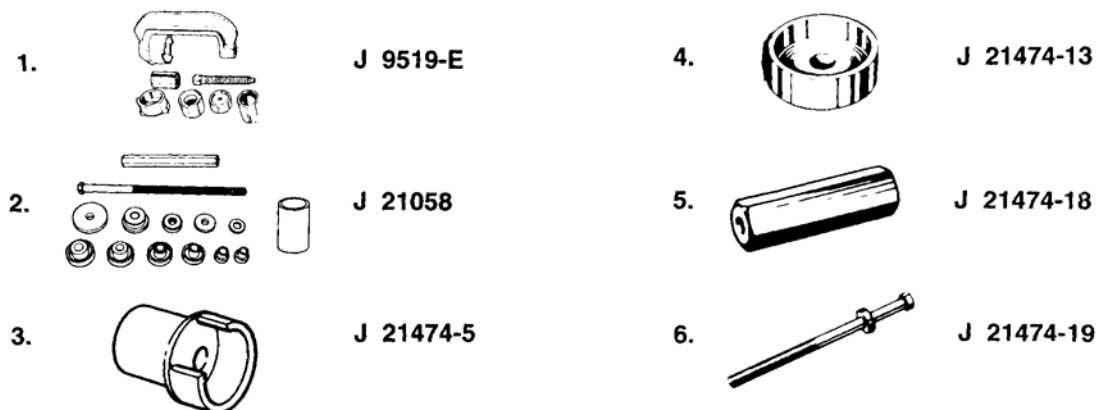
TORQUE SPECIFICATIONS (1996-97)

Application	Ft. Lbs. (N.m)
Lug (Wheel) Nuts	95 (130 N.m)
Shackle to Frame Nuts	89 (122 N.m)
Shackle to Spring Nuts	89 (122 N.m)
Shock Absorber Lower Nuts	62 (84 N.m)
Shock Absorber Upper	
Nuts (1996)	22 (22 N.m)
Bolts (1997)	18 (25 N.m)
Shock Absorber Lower Nut (4 Door Utility - 1997)	73 (100 N.m)
Spring to Front Bracket Nuts	89 (122 N.m)
Spring U-Bolt Nuts	73 (100 N.m)
Stabilizer Clamp U-Bolts Nuts	44 (60 N.m)
Stabilizer Bar Upper Link Nut (2 Door Utility)	25 (35 N.m)
Stabilizer Bar Lower Link Nut (2 Door Utility)	50 (68 N.m)
Stabilizer Bar Upper Link Nut (4 Door Utility and Pickup)	25 (35 N.m)
Stabilizer Bar Lower Link Nut (4 Door Utility and Pickup)	50 (68 N.m)
Track Bar Axle Mount Nuts	39 (53 N.m)
Track Bar Bolt to Axle Mount Nut	45 (61 N.m)
Track Bar Tie to Frame Mount Nut	45 (61 N.m)

SPECIAL TOOLS

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1. BALL JOINT REMOVER (USE WITH J 28685)
2. FRONT LOWER CONTROL ARM BUSHING SERVICE SET
3. BUSHING RECEIVER
4. CONTROL ARM BUSHING INSTALLER
5. 3/8" NUT
6. 3/8" BOLT

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Fig. 19: Identifying Rear Suspension Special Tools
Courtesy of GENERAL MOTORS CORP.